APPENDIX A:

PENDING CLAIMS AS OF SECOND RESTRICTION REQUIREMENT

18. A method of screening for a modulator of calpain function comprising:
    a) obtaining a calpain polypeptide;
    b) determining a standard activity profile of the calpain polypeptide;
    c) contacting the calpain polypeptide with a putative modulator; and
    d) assaying for a change in the standard activity profile.

19. The method of claim 18, wherein the calpain polypeptide is a calpain 10 polypeptide.

20. The method of claim 18, wherein obtaining the calpain polypeptide comprises expressing the polypeptide in a host cell.

21. The method of claim 20, wherein the calpain polypeptide is isolated away from the host cell prior to contacting the calpain polypeptide with the putative modulator.

49. The method of claim 19, wherein the standard activity profile of the calpain 10 polypeptide is determined by measuring the binding of the calpain 10 polypeptide to a synthetic substrate.

50. The method of claim 49, wherein the synthetic substrate is Suc-Leu-Tyr-AMC.

51. A method of screening for a modulator of calpain function comprising:
    a) obtaining an calpain polypeptide;
    b) contacting the calpain polypeptide with a putative modulator; and
    c) assaying for modulation of calpain function by the putative modulator.

52. The method of claim 51, wherein the calpain polypeptide is a calpain 10 polypeptide.

53. The method of claim 52, wherein the calpain 10 polypeptide has a sequence comprising SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, or SEQ ID NO:18.

54. The method of claim 51, further comprising determining a standard activity profile of the calpain polypeptide.

55. The method of claim 54, wherein the standard activity profile of the calpain 10 polypeptide is determined by measuring the binding of the calpain 10 polypeptide to a synthetic substrate.

56. The method of claim 55, wherein the synthetic substrate is Suc-Leu-Tyr-AMC.

57. The method of claim 55, wherein assaying for modulation of calpain function comprises assaying for a change in the standard activity profile.

58. The method of claim 51, wherein obtaining the calpain polypeptide comprises expressing the polypeptide in a host cell.

59. The method of claim 58, wherein the calpain polypeptide is isolated away from the host cell prior to contacting the calpain polypeptide with the putative modulator.

60. The method of claim 51, wherein obtaining the calpain polypeptide comprises obtaining a cell containing the polypeptide.

61. The method of claim 60, wherein the cell is a pancreatic cell, a muscle cell, an adipose cell, or a liver cell.

62. The method of claim 61, wherein the cell is a pancreatic cell.

63. The method of claim 62, wherein the pancreatic cell is comprised in an isolated pancreatic islet.

64. The method of claim 62, wherein the cell is a β-cell.